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10/773,137	02/04/2004	Gerald R. Fischer	12-1202	5082

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EXAMINER	
PUENTE, EVA YI ZHENG	
ART UNIT	PAPER NUMBER
2611	
MAIL DATE	DELIVERY MODE
04/04/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/773,137	FISCHER, GERALD R.	
	Examiner	Art Unit	
	EVA Y. PUENTE	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *1/23/08*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6 and 7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6 and 7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Request for Continued Examination

1. The request filed on January 23, 2008, for a Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 10/773,137 is acceptable and a RCE has been established. An action on the RCE follows.

2. Applicant's arguments, with respect to the rejection(s) of claim(s) 1-4, 6, and 7 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akutsu (US 5,930,246) in view of Palin et al (US 2005/0058116), and further in view of Rudolf et al. (US 6,930,996).

a) Regarding to claim 1, Akutsu disclose for use in an ultra wideband (UWB) communication system, a method for communicating binary data as a sequence of UWB pulses using time division multiple access (TDMA), the method comprising:

allocating a succession of TDMA time intervals to respective users (Fig. 1,

wherein Tx1, Tx2....Txn are corresponding to user 1, user 2.....user n, respectively; Col 1, L15-47);

transmitting a first user pulse in a first TDMA time interval (Tx1);

receiving a first user return pulse in the first TDMA time interval (Rx1);

transmitting a second and other user pulses in a second and subsequent respective TDMA time intervals (Tx2,....Txn); and

receiving a second user return pulse in the second TDMA time interval, and other user pulses in subsequent respective TDMA time intervals (Rx2,...Rxn).

Akutsu disclose all the subject matters above except for the specific teaching of (1) data have been transmitted and received are UWB data pulses; and (2) at least twice propagation delay between TDMA time intervals.

However, (1) Palin et al disclose a multicarrier wireless communication system implements TDMA transmission scheme in the form of UWB signals (Fig. 1 and 2; [0032], [0035] and [0038]). The UWB techniques allow for devices to exchange information at relative high data rates ([0002]). Therefore, it is obvious to one of ordinary skill in art to employee UWB data signal as taught by Palin et al in the TDMA system of Akutsu. By doing so, provide high data rate and resistant to multi-path impairment in a wireless communication system.

In addition, (2) Rudolf et al. disclose that guard symbols are inserted in each time slots (Fig. 1), wherein the guard period must be greater than the propagation time from the base station to an adjacent station in order to avoid encroachment of synchronization (Col 2, L13-17). It is well known in the TDMA communication

technology that frequency channel is divided into many different timeslots. Users are allocated on each timeslots. Guard periods are inserted in the timeslots to avoid interference between the uplink and downlink transmission. Rudolf et al.'s teaching of guard period is a well known technique. To extend such guard period to be at twice the propagation time would yield a predictable result and make improvement for TDMA system. Therefore, it is obvious to one of ordinary skill in art to set the guide period of Rudolf et al. to be at least twice the propagation time and combine with TDMA teaching of Akutsu and Palin et al. By doing so, provide synchronization and avoid interference between the uplink and downlink transmission in a TDMA system.

b) Regarding claim 2, Akutsu disclose for use in an ultra wideband (UWB) communication system, a method for communicating binary data as a sequence of UWB pulses using time division multiple access (TDMA), the method comprising:

allocating a succession of TDMA time intervals to respective users (Fig. 1, wherein Tx1, Tx2....Txn are corresponding to user 1, user 2.....user n, respectively; Col 1, L15-47);

transmitting multiple data pulses in a first TDMA time interval (Tx1, it is well known that in a TDMA system each frame having a plurality of time slots and each time slot transmitting a plurality of data bits or symbols); and

receiving multiple return data pulses later in the same TDMA time interval (Rx1 in Fig. 1).

Akutsu disclose all the subject matters above except for the specific teaching of (1) data that have been transmitted and received are UWB data pulses; and (2) the

TDMA time interval is at least twice the propagation time needed to transmit data to a user.

However, (1) Palin et al disclose a multicarrier wireless communication system implements TDMA transmission scheme in the form of UWB signals (Fig. 1 and 2; [0032], [0035] and [0038]). The UWB techniques allow for devices to exchange information at relative high data rates ([0002]). Therefore, it is obvious to one of ordinary skill in art to employee UWB data signal as taught by Palin et al in the TDMA system of Akutsu. By doing so, provide high data rate and resistant to multi-path impairment in a wireless communication system.

In addition, (2) Rudolf et al. disclose that guard symbols are inserted in each time slots (Fig. 1), wherein the guard period must be greater than the propagation time from the base station to an adjacent station in order to avoid encroachment of synchronization (Col 2, L13-17). It is well known in the TDMA communication technology that frequency channel is divided into many different timeslots. Users are allocated on each timeslots. Guard periods are inserted in the timeslots to avoid interference between the uplink and downlink transmission. Rudolf et al.'s teaching of guard period is a well known technique. To extend such guard period to be at twice the propagation time would yield a predictable result and make improvement for TDMA system. Therefore, it is obvious to one of ordinary skill in art to set the guide period of Rudolf et al. to be at least twice the propagation time and combine with TDMA teaching of Akutsu and Palin et al. By doing so, provide synchronization and avoid interference between the uplink and downlink transmission in a TDMA system.

c) Regarding claim 3, Akutsu disclose a method as defined in claim 2, wherein:

the multiple data pulses are transmitted to a first user (Tx1 a first user; it is well known that in a TDMA system each frame having a plurality of time slots and each time slot transmitting a plurality of data bits or symbols); and

the multiple return data pulses are received from the same first user (Rx1 in Fig. 1).

Akutsu disclose all the subject matters above except for the specific teaching of data have been transmitted and received are UWB data pulses.

However, Palin et al disclose a multicarrier wireless communication system implements TDMA transmission scheme in the form of UWB signals (Fig. 1 and 2; [0032], [0035] and [0038]). The UWB techniques allow for devices to exchange information at relative high data rates ([0002]).

d) Regarding to claim 4, Akutsu disclose a method as defined in claim 3, wherein the method further comprises:

transmitting multiple data pulses to a second user in a second TDMA time interval (Tx2 in Fig. 1); and

receiving multiple return data pulses from the second user in the second TDMA time interval (Rx2 in Fig.1).

Akutsu disclose all the subject matters above except for the specific teaching of data have been transmitted and received are UWB data pulses.

However, Palin et al disclose a multicarrier wireless communication system implements TDMA transmission scheme in the form of UWB signals (Fig. 1 and 2;

[0032], [0035] and [0038]). The UWB techniques allow for devices to exchange information at relative high data rates ([0002]).

e) Regarding to claim 6, Akutsu disclose for use in an ultra wideband (UWB) communication system, a method for communicating binary data as a sequence of UWB pulses using time division multiple access (TDMA), the method comprising:

allocating subintervals of each TDMA time intervals to different users (Fig. 1, wherein Tx1, Tx2....Txn are corresponding to user 1, user 2.....user n, respectively; Col 1, L15-47);

transmitting multiple data pulses in a first TDMA time interval, wherein the data pulses are address to separate multiple users (Tx1, Tx2....Txn, it is well known that in a TDMA system each frame having a plurality of time slots and each time slot transmitting a plurality of data bits or symbols); and

receiving multiple return data pulses later in the same TDMA time interval, wherein the return data pulses are received from separate multiple users (Rx1, Rx2,...Rxn in Fig. 1).

Akutsu disclose all the subject matters above except for the specific teaching of (1) data have been transmitted and received are UWB data pulses; and (2) the TDMA time interval is at least twice the propagation time needed to transmit data to a user.

However, (1) Palin et al disclose a multicarrier wireless communication system implements TDMA transmission scheme in the form of UWB signals (Fig. 1 and 2; [0032], [0035] and [0038]). The UWB techniques allow for devices to exchange information at relative high data rates ([0002]). Therefore, it is obvious to one of

ordinary skill in art to employee UWB data signal as taught by Palin et al in the TDMA system of Akutsu. By doing so, provide high data rate and resistant to multi-path impairment in a wireless communication system.

In addition, (2) Rudolf et al. disclose that guard symbols are inserted in each time slots (Fig. 1), wherein the guard period must be greater than the propagation time from the base station to an adjacent station in order to avoid encroachment of synchronization (Col 2, L13-17). It is well known in the TDMA communication technology that frequency channel is divided into many different timeslots. Users are allocated on each timeslots. Guard periods are inserted in the timeslots to avoid interference between the uplink and downlink transmission. Rudolf et al.'s teaching of guard period is a well known technique. To extend such guard period to be at twice the propagation time would yield a predictable result and make improvement for TDMA system. Therefore, it is obvious to one of ordinary skill in art to set the guide period of Rudolf et al. to be at least twice the propagation time and combine with TDMA teaching of Akutsu and Palin et al. By doing so, provide synchronization and avoid interference between the uplink and downlink transmission in a TDMA system.

f) Regarding claim 7, Akutsu disclose a method as defined in claim 6, wherein the method further comprises:

transmitting multiple data pulses to a multiple user in a second TDMA time interval (continuously transmitting Tx1, Tx2....Txn in second frame duration as shown in Fig. 1); and

receiving multiple return data pulses later in the same second TDMA time interval (continuously receiving Rx1, Rx2,...Rxn in second frame duration as shown in Fig. 1).

Akutsu disclose all the subject matters above except for the specific teaching of data have been transmitted and received are UWB data pulses.

However, Palin et al disclose a multicarrier wireless communication system implements TDMA transmission scheme in the form of UWB signals (Fig. 1 and 2; [0032], [0035] and [0038]). The UWB techniques allow for devices to exchange information at relative high data rates ([0002]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Y Puente whose telephone number is 571-272-3049. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eva Yi Puente
/E. Y. P./
Examiner, Art Unit 2611

March 26, 2008

/CHIEH M FAN/
Supervisory Patent Examiner, Art Unit 2611